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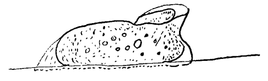
SOME NEW AND RARE INFUSORIA.

By D. S. KELLICOTT PH. D., Buffalo, N. Y.

I propose in the following notes and descriptions to continue the record of my observations on fresh-water Infusoria as published in former volumes of the Proceedings of the Society. The species described by me elsewhere are as follows: *Epistylis ophidioidea*, *The Microscope* IV., 248; *Opercularia constricta*, *Am. Monthly Microscopical Journal* VI., 121; *Podophrya inclinata*, *Podophrya flexilis*, *Carchesium granulatum* and *Opercularia humilis*, *The Microscope* VII., 225. In *The Microscope*, VI., 53, occurs a short paper on certain developmental stages met with from time to time, and, in connection with the papers printed in the Proceedings, I have referred to various rare or interesting species identified at different times.

Lagenophrys singularis, n. s. (Figs. 1, 2). Lorica depressed, convex above, deep brown in old specimens, hyaline in young. The upper anterior portion is prolonged in a gouge-shaped, hyaline semi-tube or neck; above this is a convex, hyaline, membranous lid with rounded outer edge; this lid serves to close the aparture when the disc is withdrawn. The outer edge of the spout-like neck is slightly everted. The animal nearly fills the lorica. The disc is raised considerably above the neck; it is broad, cilia ample, and the hyaline collar or frill, is conspicuous, being as broad as the disc and making a half turn.



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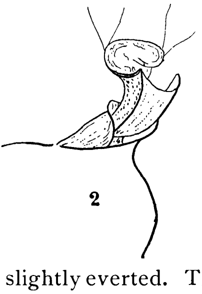

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Length of shell $\frac{1}{340}$ to $\frac{1}{320}$ of an inch; height or thickness of the same, one third the length; height of anterior prolongation, nearly equal to the thickness of the shell. Numerous examples observed on *Myriophyllum*, Scajaquada Creek, Buffalo, N. Y., July, 1887.

The several species of the genus heretofore described are ectoparasites of small crustacea; the occurrence of this one on aquatic plants is, therefore, an interesting exception. As it was found in abundance in all stages there can be no doubt of its preference for plants. With the exception of the recently named *L. labiata*, Stokes, there is no known species with which it could possibly be confused. I am acquainted with the latter and have no difficulty in separating them. *Singularis* is nearly twice the length, its lorica is of a much deeper shade, the neck, while somewhat similar, is quite different in appearance and action. This one is not so shy as those taken on animals, so the disc remains longer and more constant in expansion.

Cyrtostomum (?) *grande*, n. s. Body about twice as long as broad, subcylindrical, exceedingly elastic, extremities rounded, narrowest anteriorly, colorless or slightly brown by transmitted light, white by reflected light. Cilia fine and even. Trichocysts, very conspicuous, in a dense, uniform layer throughout the cortical substance. The mouth is subterminal (armature not fully determined owing to obscuration by the trichocysts). Anal aperture postero-lateral. Nucleus ovoid, granular. (When the endoplasm is separated from the dense cuticular layer the endoplast appears as described, but accompanied by clear globules clinging to its surface.) The contractile vesicles are many, small, pulsating slowly.

Length of body $\frac{1}{50}$ to $\frac{1}{30}$ of an inch.

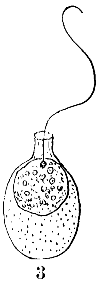
Pond water among decaying vegetable matter, with *Oscillaria*. Buffalo, N. Y.

I first encountered this remarkable form several years ago taken from the unsavory water of Erie Canal, a mile or more below Black Rock. Repeated visits to the locality at different seasons did not enable me to again find it, until this summer. It has also turned up nearer home in a sluggish stream, or what was once a stream, on Squaw Island, among decaying plants mingled with Oscillaria. It is remarkable for its bulk, exceeding in this respect any of its group met with in this vicinity; indeed its size and force enables it to capture and digest animals belonging to a much higher type. I have detected in the same individual the carapaces of two species of Rotifera, viz.: *Anuræa stipitata* and *Noteus conium;* moreover, mingled with these were two shells of a Rhizopod and diverse fragments of Oscillaria, the latter a beautiful deep maroon, due to the acid reaction of the digestive fluids of the endoplasm. If this does not show a voracity which does credit to its kind I am at a loss for a proper example. Here is the equal, in a small way, of the ling, boa or professional gormand. But how does this simple, unicellular creature catch, overcome and engulf *Noteus conium*, rapid and strong swimmer that it is? It would seem that its terrific endowment of trichocysts must have a share in the problem. I shall endeavor to answer this question at some future time.

I have put a query after the genus named for the reason that the characters of the oral aperture and the pharynx remain undetermined. That it belongs to Prorodontidæ there is, I think, no question, so while there may be a doubt as to its genus, its highly elastic body seems to place it with *Cyrtostomum leucus.* It differs from that species in its much larger size and numerous contractile vesicles. Should it prove to be a species of *Prorodon* it must be compared with *P. margaritifer*, but is slightly larger, while that species is without trichocysts.

Trachelomonas crebea, n. s., (Fig. 3). Lorica spheroidal, varying from decided brown to colorless, elliptical in side view, ratio of longitudinal to transverse diameter as 5 to 4; surface not spined, but with minute, raised points over the entire surface. Anterior tubular projection hyaline, minutely notched and slightly everted at outer extremity, one fifth the length of the shell. The animal is of the usual green, containing many coarse granules; it entirely fills the case; eye spot conspicuous.

Average length $\frac{1}{1000}$ of an inch. Taken in vast numbers from certain ponds in a pasture at Ridgeway, Ontario, August, 1887.



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Stein figures the animal of certain species of this genus as crawling through the minute foramen of the case to move about freely unprotected. It would seem scarcely possible for so large an animal to squeeze itself through so small a perforation; this suggested to Stein the proverbial camel and the eye of a needle. That under certain conditions they do desert their homes is a fact attested by the following incident: A quantity was left from evening until the following morning in a watch-glass; when on examination I found scores free from their loricæ swimming actively among those still inclosed by their cases. When free they are very changeable in shape like *Euglena.*

The prodigious multiplication of this species defies imagination; the small ponds from which my specimens were obtained exhibited a beautiful green color and had a consistency equal to that of pea-soup. Very few other species of plants or animals were mingled with them.

It is worthy of note that the young cases are not only colorless but smaller than the brown ones, while the neck is sometimes half as long as the shell. Does it grow larger after once formed?

Treatment with hydrochloric acid renders the shell more transparent, causes the animal to greatly contract (the figure is drawn from one thus treated) and renders the flagellum more readily visible. Prolonged masceration in the weak acid removes the extreme brittleness of the lorica so that the flexible walls then readily change their shape by slight pressure from without.